

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056

In the matter of the petition of Cessna Aircraft Company for an exemption from § 25.811(d)(1) of the Federal Aviation Regulations	Regulatory Docket No. 28324
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DENIAL OF EXEMPTION

By petition dated August 12, 1995, Mr. Rex D. Hamilton, Executive Engineer, Cessna Aircraft Company, One Cessna Blvd., P.O. Box 7704, Wichita, Kansas 67277-7704, petitioned for exemption from the emergency exit locator sign requirements of § 25.811(d)(1) for the Cessna Model 750 airplane.

Sections of the FAR affected:

Section 25.811(d)(1) requires that the location of each emergency exit must be indicated by a sign visible to occupants approaching along the main passenger aisle. There must be a locator sign above the aisle near each exit, or at another overhead location if it is more practical because of low headroom.

Related sections of the FAR:

Section 25.811(d)(2) requires that [in addition to the locator sign required by § 25.811(d)(1)] there must be a marker sign next to each emergency exit.

Section 25.812(b)(1)(i) requires that the emergency exit locator and marker signs required by §§ 25.811(d)(1) and (d)(2), respectively, must both comply with certain defined attributes of size, lettering, illumination, and other characteristics.

The petitioner's supportive information is as follows:

Cessna Aircraft Company respectfully submits this petition for exemption from the requirements of § 25.811(d)(1) for emergency exit locator signs on the Model 750 Citation X (ten) presently undergoing development and certification.

Section 25.811(d)(1) states that there must be a passenger emergency exit locator sign above the aisle near each passenger emergency exit, or at another overhead location if it is more practical because of low headroom, which is visible to occupants approaching along the main passenger aisle.

Cessna's reasons for seeking relief from the requirements of § 25.811(d)(1) are that we believe the intent of the requirement for an exit locator sign is peculiar to aircraft with a much larger cabin than that of the Model 750 Citation X.

Public Interest:

Since the cabin height of the Model 750 is only 5 feet 8 inches above the dropped aisle, an emergency exit locator sign above the aisle would interfere with egress through the aisle since it will create a headstrike hazard for the passengers. An occupant could strike his head on the sign and be rendered unconscious or disoriented, thereby preventing or delaying egress from the aircraft in the event of an emergency evacuation.

An emergency exit locator sign descending from the overhead panel would decrease the appearance of the aircraft, thus making it less marketable.

Reason why the exemption would not adversely affect safety:

The emergency exit [marker] signs [required by § 25.811(d)(2)] will meet or exceed the requirements of § 25.812(b) for letter height, brightness, contrast, and illumination.

Due to the size of the Model 750 cabin, the emergency exit [marker] signs required by § 25.811(d)(2) will be easily observed from anywhere in the cabin. The maximum distance a passenger will be from the furthest exit [marker] sign is no more than fourteen feet. Referencing the Human Engineering Guide, Woodson, page 2-40; the recommended size for lettering on a critical label should be at least 0.9 inches in height at a distance of fourteen feet. The lettering height for the exit [marker] sign is 1.5 inches.

The emergency exit [marker] signs are only 12.88 inches and 14.16 inches from the center of the aisle for the main cabin door and escape hatch, respectively; therefore; if the locator signs are placed at an overhead location where they do not interfere with low headroom, then they will be placed in a similar location as the [marker] signs required by § 25.811(d)(2).

A summary of Cessna's petition was published in the Federal Register on September 25, 1995 (60 FR 49433). No comments were received.

The FAA's analysis/summary is as follows:

The FAA appreciates the difficulty in attempting to comply with the exit locator sign requirements of § 25.811(d)(1) in small airplanes the size of a Cessna 750. Due to the limited ceiling height involved, there is no "overhead" location in which to install the required sign of the prescribed size. Any sign at all, installed above the aisle where the locator signs are intended to be installed to perform their function most efficiently, would present the head strike hazard that the petitioner describes.

Nevertheless, manufacturing an airplane smaller than one envisioned by the rules does not necessarily permit the manufacturer to omit from their design a required safety feature intended to guide occupants to an exit from anywhere else in the main aisle. The FAA evaluates the acceptability of proposed locator signs by standing in the main aisle at the most adverse points in the aisle, which are generally at the extreme ends of the aisle and at other exit locations, and determining whether the nearest exit locator signs in both directions, as appropriate, are adequately legible. Cessna's proposed interior arrangement, with the marker signs installed and the locator signs omitted, have been evaluated by the FAA using this standard criteria, and it has been found to be not acceptable. The marker signs are installed flat against the sidewall where most marker signs are traditionally installed, and they do fulfill the marker sign function adequately. But, due to their orientation, they are only marginally visible from the required locations for locator signs, and are not at all legible to the extent required. Therefore, the required safety function intended to be afforded by locator signs would not be provided to the passengers of Cessna 750 airplanes.

By separate action, in recognition of the small size of the Cessna 750, the FAA is currently processing an Issue Paper on this subject for the Cessna 750 airplane, in which alternative locator sign and/or marker sign configurations/installations may be proposed and evaluated for equivalency in providing the safety function of exit locator signs specified by §§ 25.811(d)(1) and 25.812(b)(1)(i). The FAA determines that although small airplanes may make literal compliance with certain specific safety requirements either impossible or impractical, the intended safety benefit of the requirements shall nevertheless be provided, through equivalent means as necessary and as deemed acceptable to the FAA.

In consideration of the foregoing, I find that a grant of exemption is not in the public interest. Therefore, pursuant to the authority contained in §§ 313(a) and 601(c) of the Federal Aviation Act of 1958, delegated to me by the Administrator (14 CFR 11.53), the petition of Cessna Aircraft Company for an exemption from the emergency exit locator sign requirements of § 25.811(d)(1) of the FAR, on the Cessna Model 750 airplane, is hereby denied.

Issued in Renton, Washington, on

Darrell M. Pederson
Acting Manager,
Transport Airplane Directorate
Aircraft Certification Service, ANM-100